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XI International Eurasian Educational Research Congress

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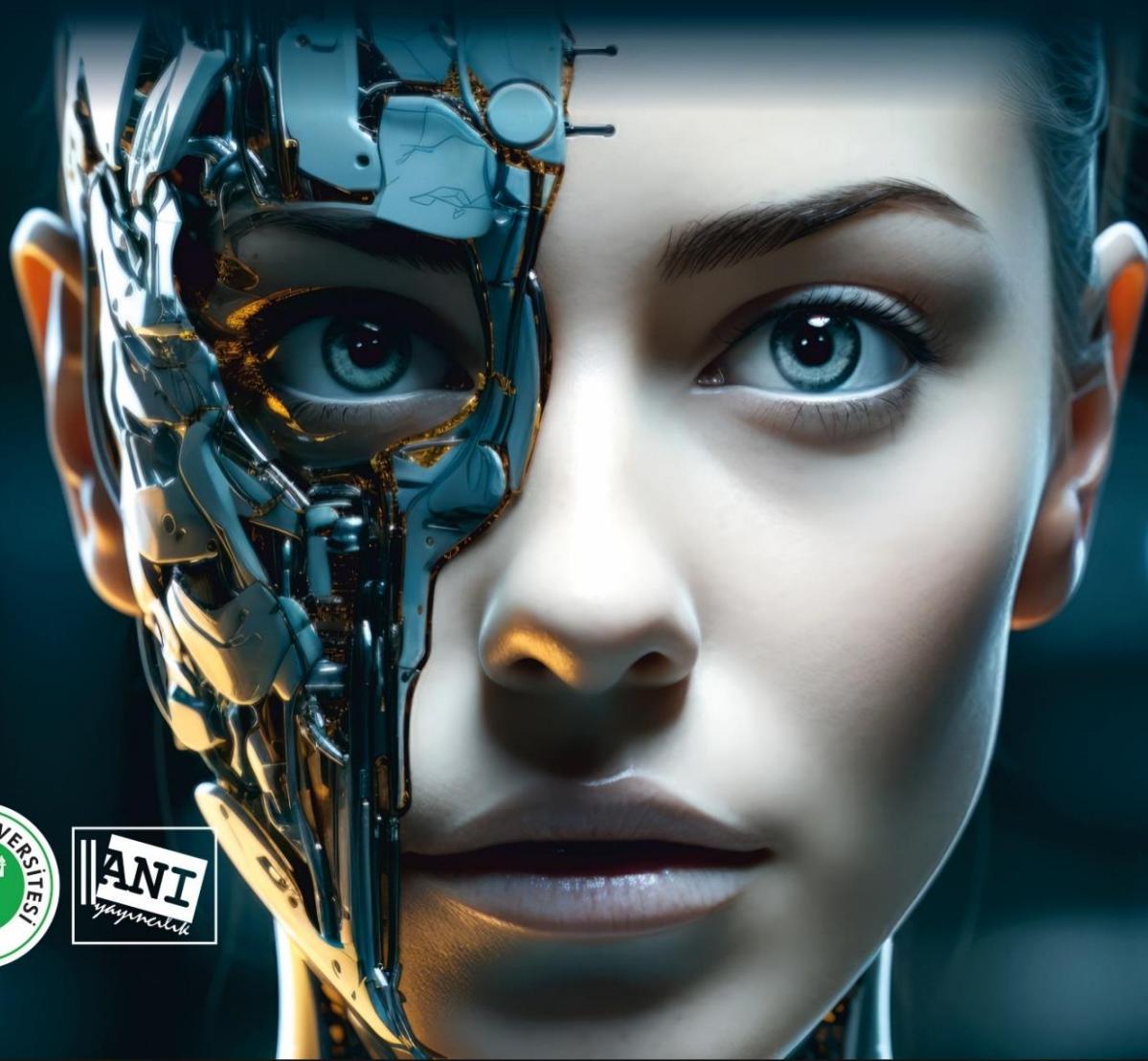
XI INTERNATIONAL EURASIAN

EDUCATIONAL RESEARCH CONGRESS

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PROCEEDINGS

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Main Theme

"Designing the Future: Changing Paradigms and Transhumanism with Artificial Intelligence in Education"

Sub-Themes

- Academic freedom, autonomy, and social responsibility in education
- Artificial intelligence and educational applications
- Augmented reality applications
- Barriers to learning
- Blended learning
- Computer-assisted measurement and evaluation
- Core skill sets for students and teachers
- Design of school buildings in the future
- Designing and delivering a digital strategy
- Digital competence
- Digital parenting
- Distance Education
- Earthquake Education
- Post Earthquake Trauma Training
- Earthquake and Effective Psychosocial Intervention Methods
- Earthquake and Trauma
- The Impact of Earthquakes on School Staff
- Education and society
- Education for healthy living and healthy communities
- Education for a sustainable life
- Education in the digital age: Primary, secondary, high school, higher education, and application examples
- Educational leadership in the digital age
- Effects of regional differences on education
- Equity, Diversity, and Inclusion Related to Marginalized Groups
- Emergency Management at Schools
- Evidence-Based School Counseling Services for Refugees and Marginalized Groups
- Globalisation and Education
- Higher education
- Innovative learning designs for student success
- Instructional technologies in the digital age
- Integration of immigrants into education
- K-12 education (preschool, primary, and secondary education)
- Learning management systems
- Lifelong learning
- Machine learning
- Management information system
- Managing schools
- Measurement and evaluation of students' learning outcomes
- Metaverse
- Migration and education
- Multicultural Classroom Concerns of Educators and Parents
- New educational system after COVID-19
- New skills to live and work in new times
- New technologies in teaching and learning

- New trends in educational research
- New trends in learning and teaching methods
- New trends in research methods
- Pedagogy, educational programs, and teaching
- Politics, good governance, and leadership in the educational sector
- Program design and development
- Promoting equality, diversity, and inclusion
- Psychological counseling and guidance in education
- Quality assurance/standards and accreditation
- Research and innovations in education
- Research ethics
- Right to an education
- Sustainable Educational Goals Related to Refugees
- Teacher education in the digital age
- The Possibility of Fundamental Changes in the Curriculum
- The role of parents in education
- The skills we need to thrive in a post-COVID-19 world
- Vocational education
- Ways to overcome the digital divide

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This book has been compiled with contributions from 61 authors representing 35 different universities in Turkiye, the United States, and Iran, as well as Turkiye's Ministry of National Education. Among the contributors, there are 51 authors from 31 universities 6 authors from education institutions in Turkey, 3 authors from 2 universities in the United States, and 1 author from a university in Iran.

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The Effectiveness of Providing Immediate Feedback in Improving the Teaching Practice Skills of Special Education Teacher Candidates: Bug-in-ear (BIE) Auditory Technology Coaching

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Abstract

The objective of this study was to provide immediate feedback to special education teacher candidates during the teaching practice process. The presence of the academician offering coaching in the classroom during the teaching process has the potential to cause students with special needs distress and impede their ability to focus on the lesson. To address this issue, the effectiveness of a technology that will enable the coaching academician to provide instant feedback to pre-service teachers outside the classroom environment will be evaluated. The application, designated as BIE (Bug-in-ear) technology, enables the pre-service teacher to receive instant feedback through headphones. The application process necessitates the pre-service teacher to wear a headset that will permit him/her to receive feedback via Bluetooth technology. Concurrently, a smartphone is utilized to reflect the teaching process within the environment. The academician who will provide coaching is able to instantly observe the teaching process and provide feedback during the teaching. The research was designed according to the multiple probe model, which involves a probe phase between participants. This is one of the single-subject research models. Four pre-service teachers in their final year enrolled in the Special Education Teacher Education program at Bursa Uludağ University participated in the study. The implementation process of the research was carried out in the Ipek Special Education Application School, where children with special needs receive education in the Nilüfer District of Bursa province. The data from the study were evaluated using graphical analysis, a common method in single-subject research. The data obtained from social validity data were analyzed descriptively. The findings of the study indicate that the auditory technology coaching utilized in the development of pre-service special education teachers' implementation skills has a positive impact on their abilities.

Introduction

The evaluation of teacher training programs underscores the vital importance of providing constructive educational feedback to pre-service teachers (Englert et al., 1992). The quality of corrective feedback received by pre-service teachers has been shown to have a significant impact on their academic performance (Englert et al., 1992; Madsen et al., 1968). With the advent of new technologies, there has been a notable evolution in the field of providing feedback to pre-service teachers (Sutherland & Wehby, 2001). A review of the teacher training programs currently in place in Turkey reveals that pre-service teachers are evaluated using traditional methods. This indicates that pre-service teachers receive delayed feedback, often hours, days, or weeks after teaching (Malott & Suarez, 2004). The potential consequences of any mistake made by teachers or pre-service teachers working with children with special needs can be irreversible. Therefore, the importance of receiving immediate feedback in this process is paramount.

It has been observed that pre-service teachers receive feedback from academics and mentor teachers through coaching and supervision in the teaching practice process. Here, we observe that pre-service teachers receive feedback in traditional ways, namely at the conclusion of the experimental teaching process. It is postulated that this delayed feedback may render the implementation process ineffective, as the mistakes made may become a habit, thereby creating a negative environment (Coulter & Grossen, 1997; Malott & Suarez, 2004; Scheler & Lee, 2002; Scheeler et al., 2004). The existing literature indicates that the teaching process is more efficient when pre-service teachers and teachers receive immediate feedback.

The objective of this study was to provide immediate feedback to special education teacher candidates during the teaching practice process. The presence of the academician providing coaching in the classroom during the teaching process has the potential to cause students with special needs distress and impede their ability to focus on the lesson. To address this issue, the effectiveness of a technology that will enable the coaching academician to provide instant feedback to the pre-service teachers outside the classroom environment will be evaluated. The application, designated as BIE (Bug-in-ear) technology, enables the pre-service teacher to receive immediate feedback through headphones. The application process necessitates that the pre-service teacher wear a headset, which will permit him or her to receive feedback via Bluetooth technology. Concurrently, a smartphone is utilized to reflect the teaching process within the environment. The academician who will provide coaching is then able to instantly observe the teaching process during the teaching and provide feedback.

Image 1

Illustrates the Provision of Immediate Feedback from a Remote Location
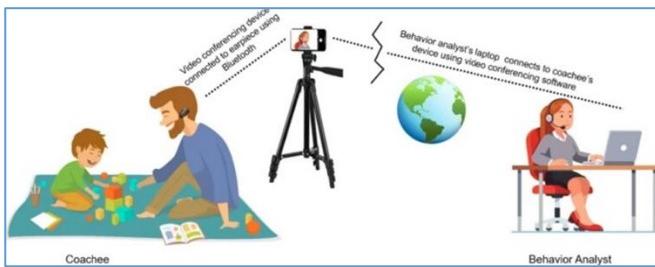
The efficacy of using technologies that provide instant feedback to enhance pre-service teachers' skills in the teaching process has been a subject of study for several decades. The inaugural study on auditory coaching (Bug-in-ear) was published in the field of clinical psychology. Korner and Brown (1952) underscored the potential and efficacy of this technology in training clinical psychologists. In the following years, additional studies were conducted to investigate the effectiveness of this technology. The findings of these studies demonstrated that this technology was indeed effective (Gallant & Thyer, 1989). Researchers have identified the most significant advantage of auditory coaching as the ability to provide immediate feedback (Hall, 1982). Additionally, they have emphasized the importance of the length of the feedback, suggesting that a lack of immediate feedback may lead to low motivation.

The first documented use of auditory coaching (BIE) in the field of education was in 1971 (Herold, Ramirez, & Newkirk, 1971). Subsequently, further studies have demonstrated that this technology is a more effective method of providing feedback than traditional methods. These studies were conducted in primary school, special education, early childhood, and physical education (Bowles & Nelson, 1976; Giebelhaus & Cruz, 1992, 1994, 1995; Kahan, 2002). For further details, please refer to Scheler and Lee (2002), Scheler et al., (2006), Thomson et al., (1978), and van der Mars (1988).

The objective of the auditory coaching provided to pre-service special education teachers is to enhance the proficiency of students in several key competencies. These competencies have been identified as essential for effective lesson introduction, conveying information to students, posing questions, responding to questions, utilizing contextual cues, providing effective reinforcement, offering praise, responding to problematic behaviors, and concluding the lesson. In Turkey, research on the integration of technology in teacher training is relatively limited. It is anticipated that this study will make a substantial contribution to the field of teacher training.

The objective of this study was to evaluate the efficacy of auditory coaching (bug-in-ear) in enhancing the pedagogical competencies of pre-service special education teachers. To this end, the following research questions were posed:

- Does auditory coaching prove an effective strategy for developing the pedagogical competencies of pre-service teachers?

- What are the opinions and suggestions of pre-service teachers at the conclusion of the auditory coaching process?

Method

Research Model

This study was designed according to the multiple probe model with a between-participant probe phase, one of the single-subject research models. In this model, baseline data are collected simultaneously in all cases, and after obtaining stable data in the first case, the baseline phase is terminated and the intervention is initiated in the first case. While the implementation phase continues in the first case, no data are collected in the second and third cases. After the criterion is met and stable data are obtained in the first case, the first probe phase is organized simultaneously in all cases. After stable data is obtained in the first probe phase in the second case, instruction is started in the second case. This process continues until the criterion is met in all behaviors (Tekin-İftar & Kırcaali-İftar, 2020).

Participants of the Study

Three pre-service teachers who are in their final year of enrollment in the Special Education Teacher Education program at Bursa Uludağ University participated in the study. The age range of the participants was 20-24, with one female and two males. The implementation process of the research took place in a special education practice school where children with special needs receive education in the Nilüfer District of Bursa province.

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Data Collection Tools

Materials

The study used Bluetooth headsets to be used by the pre-service teachers and the researcher, and a smartphone that reflected the pre-service teacher's teaching process. The Ms Teams program was used to facilitate instant recording. The recorded video and audio files were stored on a computer and kept to obtain interobserver reliability data.

The researcher also used a pre-service teacher observation form prepared by the researcher to record the feedback given to the pre-service teachers during the teaching process. In addition, at the end of the implementation process, semi-

structured interview questions prepared by the researcher were used to obtain the social validity data of the research.

Data Analysis

The data from the study were evaluated using graphical analysis, a method commonly employed in single-subject research. The data obtained for social validity were analyzed descriptively.

Results

The graphical analysis of the participants in the study is presented in Table 1. It can be observed that the first participant required four sessions to meet the established criterion, while the second and third participants required two sessions. Additionally, it is evident that the participants were able to maintain the skills they had acquired by the conclusion of the teaching sessions.

Table1
Graphical Analysis of Participants' Teaching Practice Skills
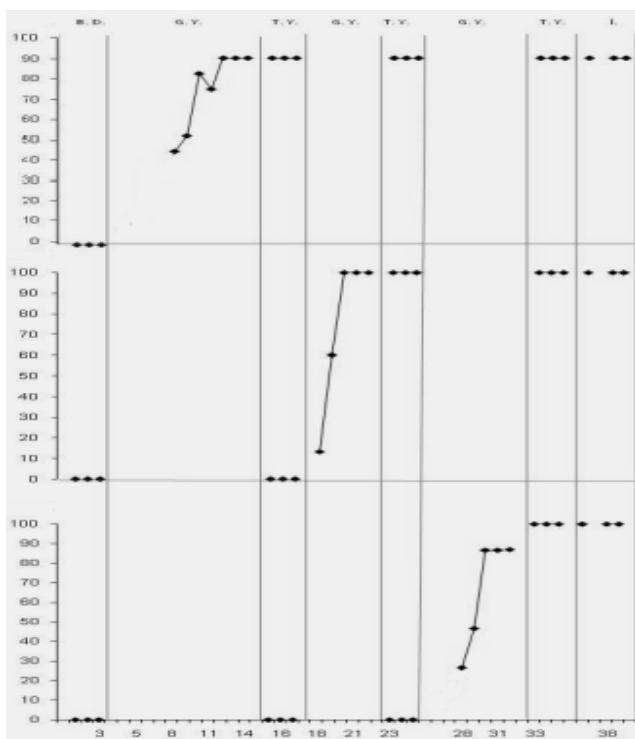
Validity/Reliability

In the study, two types of reliability data were collected: inter-rater reliability and implementation reliability. The Mass Probe, Daily Probe, and Monitoring Sessions were numbered separately and reliability data were collected by observing the selected sessions using a random assignment table. Inter-observer reliability and implementation reliability data were collected in 20% of all probe, instruction, and monitoring sessions. The inter-observer reliability was calculated using the formula "agreement/[agreement+disagreement] X 100" (Kırcaaliİftar & Tekin, 2020). The mean inter-observer reliability for the mass probe sessions was 100%. The mean inter-observer reliability for the daily probe sessions was 99%, while the mean inter-observer reliability for the follow-up sessions was 100%.

Social Validity

In the study, social validity data were collected from the participants regarding the auditory coaching process. The data obtained show that the pre-service teachers were more successful in the sessions in which they received immediate feedback compared to the feedback received after the instruction. For example, P1; "Giving feedback instantly made it easier for us to intervene with the student we practiced instantly, quickly and without making mistakes. On the other hand, since we cannot intervene instantly in the feedback given at the end of the instruction, we cannot have this opportunity". P2: "I think that the feedback received during the teaching is more advantageous than the feedback received after the teaching. I can list these advantages as the instant correction of mistakes and errors, the ability to ask the questions we want to ask instantly, and the ability of our teacher to intervene immediately." P3: "It was a very useful process, the fact that our teacher was not in the classroom and only I could hear him from a distance did not distract the student I was working with." Regarding the negative aspects of the process, P3: "At first, being monitored made me very excited, and since I was the only one who could hear our teacher, the feedback he gave in between caused me to be surprised in the teaching process."

Conclusion

Preparing pre-service teachers for teaching is a very important stage and the best time to experience this experience is the Teaching Practicum in the final year. The feedback given by the instructor is important for pre-service teachers and the fact that this feedback is given at the end of the teaching sessions sometimes leads to fatal mistakes. The frequent use of developing and changing technology in educational environments has begun to manifest itself in the field of pre-service teacher training. The findings of this study show that providing immediate feedback on effective teacher behaviors has positive results.

Recommendations

In light of the findings of this study, recommendations can be made for further research and applications. Auditory coaching, which is currently employed in pre-service teacher training programs, can also be conducted with teachers who have recently commenced their teaching careers. The research can be conducted with a larger number of pre-service teachers or teachers who have utilized different research methods, in addition to single-subject experimental designs. The auditory coaching employed in the research can be made available to individuals with special needs, with a view to imparting a range of skills.

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